Application No. 09/807,436

Amendment dated December 4, 2003

Reply to Office Action of September 8, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-18. (canceled)

19. (currently amended): A sliding member consisting essentially of a substrate and a hard coating formed on said substrate, wherein said hard coating consists essentially of titanium nitride and Cr, has a face-centered cubic crystalline structure with a lattice constant ranging from 0.414 to 0.423 nm in a crystal of said nitride-based material and has a Vickers hardness of not less than 2500 Hv.

20. (currently amended): A sliding member consisting essentially of a substrate and a hard coating formed on said substrate, wherein said hard coating consisting essentially of titanium nitride and B, has a face-centered cubic crystalline structure comprising crystallites of an average size of not more than 9 nm and has a Vickers hardness of higher than 3000 Hv.

21. (currently amended): A sliding member consisting essentially of a substrate and a hard coating formed on said substrate, wherein said hard coating consisting essentially of titanium nitride and at least one element selected from the group consisting of Zr and Hf, has a face-centered

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cubic crystalline structure with a lattice constant ranging from 0.414 to 0.423 nm in a crystal of said

nitride-based material and has a Vickers hardness of not less than 2500 Hv.

22. (previously presented): A sliding member according to any of claims 19, 20 and 21,

wherein said nitride-based material has a chemical composition defined in a formula, excepting

inevitable impurities:

Ti_(100-x)Me_x nitride compound

where Me represents one element selected from the group consisting of Cr, Zr, Hf and B,

and x is in a range given by a relation:

2 atomic $\% \le x \le 30$ atomic %.

23. (previously presented): A method for making a sliding member according to any of

claims 19, 20 and 21, comprising the steps of: forming a hard coating on said substrate by

simultaneously depositing in a vacuum Ti and at least one element selected from the group

consisting of Cr, Zr, Hf and B on said substrate while irradiating said substrate with ion beams

containing substantially nitrogen ions.

24. (previously presented): A sliding mechanism consisting essentially of a combination

of a movable member and a static member, wherein either said movable member or said static

member is made of a sliding member according to any of claims 19, 20 and 21, or made by a

method comprising the steps of: forming a hard coating on said substrate by simultaneously

depositing in a vacuum Ti and at least one element selected from the group consisting of Cr, Zr,

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Hf and B on said substrate while irradiating said substrate with ion beams containing substantially nitrogen ions, and the remaining member is made of a material containing carbon.

- 25. (previously presented): A sliding mechanism according to claim 24, wherein said material containing carbon is a material containing substantially carbon, a material infiltrated with carbon or a thin film containing carbon.
- 26. (previously presented): A sliding member according to any of claims 19, 20 and 21, wherein said substrate is a metal material.
- 27. (previously presented): A method according to claim 23 wherein said substrate is a metal material.
- 28. (previously presented): A sliding mechanism according to claim 24, wherein said substrate is a metal material.
- 29. (previously presented): A sliding mechanism according to claim 25, wherein said substrate is a metal material.
- 30. (previously presented): A dressing tool consisting essentially of a sliding member according to any of claims 19, 20 and 21, or comprising a sliding member made by a method comprising the steps of: forming a hard coating on said substrate by simultaneously depositing in

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a vacuum Ti and at least one element selected from the group consisting of Cr, Zr, Hf and B on said substrate while irradiating said substrate with ion beams containing substantially nitrogen ions.

31. (canceled)